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Name_____

"READER—PERSEVERE."

BEECHAM'S

HELP TO SCHOLARS,

CONTAINING

ARITHMETICAL TABLES AND SIGNS,

WEIGHTS AND MEASURES,

TABLES OF THE METRIC SYSTEM,

AND OTHER USEFUL INFORMATION.

Published by the Proprietor of "BEECHAM'S PILLS," with a view of rendering a small assistance to the Youth of the Country.

PROPRIETOR.

THOS. BEECHAM, ST. HELENS, Lancashire.

McCORQUODALE & CO., LIMITED, PRINTERS, NEWTON-LE-WILLOWS.

38223184

MO pam
QV 26
1892
B418

PRACTICE.

Parts of a Pound.

s.	*d.*		
10	0	...	One-half
6	8	...	One-third
5	0	...	One-fourth
4	0	...	One-fifth
3	4	...	One-sixth
2	6	...	One-eighth
2	0	...	One-tenth
1	8	...	One-twelfth
1	4	...	One-fifteenth
1	3	...	One-sixteenth
1	0	...	One-twentieth

Parts of a Shilling.

d.		
9	...	Three-fourths
8	...	Two-thirds
6	...	One-half
4	...	One-third
3	...	One-fourth
2	...	One-sixth
1½	...	One-eighth
1	...	One-twelfth

Parts of a Penny.

d.			
½	...	...	... One-half
¼	...	...	... One-fourth

Parts of a Ton.

cwt.	*qrs.*		
10	0	...	One-half
5	0	...	One-fourth
4	0	...	One-fifth
2	2	...	One-eighth
2	0	...	One-tenth
1	0	...	One-twentieth

Parts of a Cwt.

qrs.	*lbs.*		
2	0	...	One-half
1	0	...	One-fourth
0	16	...	One-seventh
0	14	...	One-eighth

Parts of a Quarter.

lbs.			
14	...	...	One-half
7	...	...	One-fourth
4	...	...	One-seventh
3½	...	...	One-eighth

Parts of an Acre.

rds.	*pls.*		
2	0	...	One-half
1	0	...	One-fourth
0	20	...	One-eighth
0	10	...	One-sixteenth

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MULTIPLICATION TABLE.

Twice			3 times			4 times			5 times		
1	are	2	1	are	3	1	are	4	1	are	5
2	,,	4	2	,,	6	2	,,	8	2	,,	10
3	,,	6	3	,,	9	3	,,	12	3	,,	15
4	,,	8	4	,,	12	4	,,	16	4	,,	20
5	,,	10	5	,,	15	5	,,	20	5	,,	25
6	,,	12	6	,,	18	6	,,	24	6	,,	30
7	,,	14	7	,,	21	7	,,	28	7	,,	35
8	,,	16	8	,,	24	8	,,	32	8	,,	40
9	,,	18	9	,,	27	9	,,	36	9	,,	45
10	,,	20	10	,,	30	10	,,	40	10	,,	50
11	,,	22	11	,,	33	11	,,	44	11	,,	55
12	,,	24	12	,,	36	12	,,	48	12	,,	60

6 times			7 times			8 times			9 times		
1	are	6	1	are	7	1	are	8	1	are	9
2	,,	12	2	,,	14	2	,,	16	2	,,	18
3	,,	18	3	,,	21	3	,,	24	3	,,	27
4	,,	24	4	,,	28	4	,,	32	4	,,	36
5	,,	30	5	,,	35	5	,,	40	5	,,	45
6	,,	36	6	,,	42	6	,,	48	6	,,	54
7	,,	42	7	,,	49	7	,,	56	7	,,	63
8	,,	48	8	,,	56	8	,,	64	8	,,	72
9	,,	54	9	,,	63	9	,,	72	9	,,	81
10	,,	60	10	,,	70	10	,,	80	10	,,	90
11	,,	66	11	,,	77	11	,,	88	11	,,	99
12	,,	72	12	,,	84	12	,,	96	12	,,	108

10 times			11 times			12 times			13 times		
1	are	10	1	are	11	1	are	12	1	are	13
2	,,	20	2	,,	22	2	,,	24	2	,,	26
3	,,	30	3	,,	33	3	,,	36	3	,,	39
4	,,	40	4	,,	44	4	,,	48	4	,,	52
5	,,	50	5	,,	55	5	,,	60	5	,,	65
6	,,	60	6	,,	66	6	,,	72	6	,,	78
7	,,	70	7	,,	77	7	,,	84	7	,,	91
8	,,	80	8	,,	88	8	,,	96	8	,,	104
9	,,	90	9	,,	99	9	,,	108	9	,,	117
10	,,	100	10	,,	110	10	,,	120	10	,,	130
11	,,	110	11	,,	121	11	,,	132	11	,,	143
12	,,	120	12	,,	132	12	,,	144	12	,,	156

DIVISION TABLE.

2 into			3 into			4 into		
2	=	1	3	=	1	4	=	1
4	=	2	6	=	2	8	=	2
6	=	3	9	=	3	12	=	3
8	=	4	12	=	4	16	=	4
10	=	5	15	=	5	20	=	5
12	=	6	18	=	6	24	=	6
14	=	7	21	=	7	28	=	7
16	=	8	24	=	8	32	=	8
18	=	9	27	=	9	36	=	9
20	=	10	30	=	10	40	=	10
22	=	11	33	=	11	44	=	11
24	=	12	36	=	12	48	=	12

5 into			6 into			7 into		
5	=	1	6	=	1	7	=	1
10	=	2	12	=	2	14	=	2
15	=	3	18	=	3	21	=	3
20	=	4	24	=	4	28	=	4
25	=	5	30	=	5	35	=	5
30	=	6	36	=	6	42	=	6
35	=	7	42	=	7	49	=	7
40	=	8	48	=	8	56	=	8
45	=	9	54	=	9	63	=	9
50	=	10	60	=	10	70	=	10
55	=	11	66	=	11	77	=	11
60	=	12	72	=	12	84	=	12

8 into			9 into			10 into		
8	=	1	9	=	1	10	=	1
16	=	2	18	=	2	20	=	2
24	=	3	27	=	3	30	=	3
32	=	4	36	=	4	40	=	4
40	=	5	45	=	5	50	=	5
48	=	6	54	=	6	60	=	6
56	=	7	63	=	7	70	=	7
64	=	8	72	=	8	80	=	8
72	=	9	81	=	9	90	=	9
80	=	10	90	=	10	100	=	10
88	=	11	99	=	11	110	=	11
96	=	12	108	=	12	120	=	12

TABLE OF FACTORS.

12 = 2 × 6	33 = 3 × 11	66 = 6 × 11
12 = 3 × 4	35 = 5 × 7	70 = 7 × 10
14 = 2 × 7	36 = 3 × 12	72 = 6 × 12
15 = 3 × 5	36 = 4 × 9	72 = 8 × 9
16 = 2 × 8	36 = 6 × 6	77 = 7 × 11
16 = 4 × 4	40 = 4 × 10	80 = 8 × 10
18 = 2 × 9	40 = 5 × 8	81 = 9 × 9
18 = 3 × 6	42 = 6 × 7	84 = 7 × 12
20 = 2 × 10	44 = 4 × 11	88 = 8 × 11
20 = 4 × 5	45 = 5 × 9	90 = 9 × 10
21 = 3 × 7	48 = 4 × 12	96 = 8 × 12
22 = 2 × 11	48 = 6 × 8	99 = 9 × 11
24 = 2 × 12	49 = 7 × 7	100 = 10 × 10
24 = 3 × 8	50 = 5 × 10	108 = 9 × 12
24 = 4 × 6	54 = 6 × 9	110 = 10 × 11
25 = 5 × 5	55 = 5 × 11	120 = 10 × 12
27 = 3 × 9	56 = 7 × 8	121 = 11 × 11
28 = 4 × 7	60 = 5 × 12	132 = 11 × 12
30 = 3 × 10	60 = 6 × 10	144 = 12 × 12
30 = 5 × 6	63 = 7 × 9	
32 = 4 × 8	64 = 8 × 8	

THE ROMAN NOTATION TABLE.

1	I	11	XI	25	XXV	300	CCC
2	II	12	XII	30	XXX	400	CD
3	III	13	XIII	40	XL	500	D
4	IV	14	XIV	50	L	600	DC
5	V	15	XV	60	LX	700	DCC
6	VI	16	XVI	70	LXX	800	DCCC
7	VII	17	XVII	80	LXXX	900	CM
8	VIII	18	XVIII	90	XC	1000	M
9	IX	19	XIX	100	C	1500	MD
10	X	20	XX	200	CC	1892	MDCCCXCII

COINS IN USE.

BRONZE	Farthing	¼d.
	Half-penny	½d.
	Penny	1d.
SILVER	Three-pence	3d.
	Six-pence...	6d.
	Shilling	1s. 0d.
	Florin	2s. 0d.
	Double-florin	4s. 0d.
	Half-crown	2s. 6d.
	Crown	5s. 0d.
GOLD	Half-sovereign	10s. 0d.
	Sovereign...	£1

COINS FORMERLY USED.

GOLD	Moidore	27s.
	Guinea	21s.
	Mark	13s. 4d.
	Angel	10s.
	Noble	6s. 8d.
SILVER	Tester	6d.
	Groat	4d.

BEECHAM'S PILLS

ARE

WORTH A GUINEA A BOX.

FARTHINGS Table.

Far.		*d.*
1	=	¼
2	=	½
3	=	¾
4	make	1
8	,,	2
12	,,	3
16	,,	4
20	,,	5
24	,,	6
28	,,	7
32	,,	8
36	,,	9
40	,,	10
44	,,	11
48	,,	12
960	,,	£1

Miscellaneous.

12 units make 1 doz.

12 doz. or 144 units } 1 gross.

20 units make 1 score.

24 sheets of paper } 1 quire.

20 quires of paper } 1 ream.

4 reams of paper } 1 bundle.

PENCE Table.

d.		*s.*	*d.*
12	make	1	0
20	,,	1	8
24	,,	2	0
30	,,	2	6
36	,,	3	0
40	,,	3	4
48	,,	4	0
50	,,	4	2
60	,,	5	0
70	,,	5	10
72	,,	6	0
80	,,	6	8
84	,,	7	0
90	,,	7	6
96	,,	8	0
100	,,	8	4
108	,,	9	0
110	,,	9	2
120	,,	10	0
130	,,	10	10
132	,,	11	0
140	,,	11	8
144	,,	12	0
200	,,	16	8
240	,,	£1	

SHILLINGS Table.

s.		*£*	*s.*
20	make	1	0
30	,,	1	10
40	,,	2	0
50	,,	2	10
60	,,	3	0
70	,,	3	10
80	,,	4	0
90	,,	4	10
100	,,	5	0
110	,,	5	10
120	,,	6	0
130	,,	6	10
140	,,	7	0
150	,,	7	10
160	,,	8	0
170	,,	8	10
180	,,	9	0
190	,,	9	10
200	,,	10	0
300	,,	15	0
400	,,	20	0
500	,,	25	0
600	,,	30	0
800	,,	40	0
1000	,,	50	0

WEIGHTS and MEASURES, as required by Code.

AVOIRDUPOIS WEIGHT.

16 Drachms *(dr.)*	1 Ounce	*oz.*
16 Ounces	1 Pound	*lb.*
28 Pounds	1 Quarter	*qr. of cwt.*
4 Quarters	1 Hundred-weight	*cwt.*
20 Hundred-weight	1 Ton	*ton.*

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14 Lbs.	1 Stone.	
8 Stones	1 Cwt.	*80 qrs. 1 ton.*
112 Lbs.	1 Cwt.	
2,240 Lbs.	1 Ton.	

LONG MEASURE.

12 Inches *(in.)*	1 Foot	*ft.*
3 Feet	1 Yard	*yd.*
5½ Yards	1 Rod, pole, *or* perch	*pl. per.*
40 Poles	1 Furlong	*fur.*
8 Furlongs	1 Mile	*ml.*
3 Miles	1 League	*lea.*

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3 Barley-corns	1 Inch
6 Feet, or 2 yards	1 Fathom
22 Yards, or 4 poles	1 Chain
10 Chains, or 220 yards	1 Furlong
1,760 Yards	1 Mile

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60 Geographical, *or* 69½ English Miles 1 degree *(1°.)*
360 Degrees *(degr.)* the circumference of a circle.

SQUARE MEASURE.

144	Square inches	1	Square foot	*sq. ft.*
9	Square feet ...	1	Square yard	*sq. yd.*
30¼	Square yards	1	Square pole, rod *or* perch	
40	Poles	1	Rood	*rd.*
4	Roods	1	Acre	*ac.*
640	Acres	1	Square mile	*sq. mi.*
10,000	Square links	1	Square chain	*sq. ch.*
10	Square chains	1	Acre	
4,840	Square yards	1	Acre	
100	Acres ...	1	Hide of land	

CUBIC MEASURE.

1,728	Cubic inches	1	Cubic foot	*cu. ft.*
27	Cubic feet	1	Cubic yard	*cu. yd.*

MEASURE OF CAPACITY.

Dry Measure used for all kinds of Grain.

4	Gills	1	Pint	*pt.*
2	Pints	1	Quart	*qt.*
4	Quarts	1	Gallon	*gal.*
2	Gallons	1	Peck	*pk.*
4	Pecks	1	Bushel	*bush.*
8	Bushels	1	Quarter	*qr.*
5	Quarters	1	Load or wey	*ld.*
2	Loads	1	Last	
2	Quarts	1	Pottle	
4	Bushels	1	Sack or comb.	

TIME MEASURE.

60	Seconds *(sec.)*	1 Minute	*min.*
60	Minutes	1 Hour	*hr.*
24	Hours	1 Day	*dy.*
7	Days	1 Week	*wk.*
4	Weeks	1 Lunar month.	
12	Calendar months }		
13	Lunar months }	1 Year	*yr.*
365	Days	1 Year.	
366	Days	1 Leap-year.	
52	Weeks	1 Year.	
100	Years	1 Century.	

LIST OF DAYS IN EACH MONTH.

Thirty days hath September,
April, June, and November,
February hath twenty-eight alone,
And all the rest have thirty-one,
But leap-year coming once in four,
February then has one day more.

NOTE.—*When the date of the year is divisible by 4 without remainder it is Leap-year, as 1892. (A.D. 1900 excepted.)*

THE QUARTER DAYS.

Lady Day	March 25th.
Midsummer	June 24th.
Michaelmas	September 29th.
Christmas	December 25th.

WEIGHTS and MEASURES in use, but not required by Code.

TROY WEIGHT.

Used in weighing gold, silver, jewels, &c.

24	Grains *(gr.)*	1 Pennyweight		*dwt.*
20	Pennyweights	1 Ounce		*oz.*
12	Ounces	1 Pound.		*lb.*

APOTHECARIES WEIGHT.

20	Grains	1 Scruple	℈	*scr.*
3	Scruples	1 Dram	ʒ	*dr.*
8	Drams	1 Ounce	℥	*oz.*
12	Ounces	1 Pound		*lb.*

CLOTH MEASURE.

2¼	Inches *(in.)*	1 Nail	*nl.*
4	Nails or 9 Inches	1 Quarter	*qr.*
4	Quarters or 36 Inches ...	1 Yard	*yd.*
5	Quarters	1 English Ell	
3	Quarters	1 Flemish Ell	
6	Quarters	1 French Ell	

WEIGHTS and MEASURES in use, but not required by Code.

WINE MEASURE.

4	Gills *(gls.)*	1 Pint	*pt.*
2	Pints	1 Quart	*qt.*
4	Quarts	1 Gallon	*gal.*
10	Gallons	1 Anker	*ank.*
18	Gallons	1 Runlet	*run.*
42	Gallons	1 Tierce	
84	Gallons	1 Puncheon	*pun.*
63	Gallons	1 Hogshead	*hhd.*
2	Hogsheads	1 Pipe or Butt	
2	Pipes	1 Tun	

ALE AND BEER MEASURE.

2	Pints *(pt.)*	1 Quart	*qt.*
4	Quarts	1 Gallon	*gal.*
9	Gallons	1 Firkin	*fir.*
2	Firkins, or 18 gallons	1 Kilderkin	*kil.*
2	Kilderkins, or 36 gallons	1 Barrel	*bar.*
54	Gallons, or 1½ barrels	1 Hogshead	*hhd*
2	Hogsheads, or 3 barrels	1 Butt	*bt.*

TABLES OF THE "METRIC SYSTEM."

The Unit of **Length** is the METRE = 39·37 inches.

Multiples—Decametre	=	10	metres.
Hectometre	=	100	,,
Kilometre	=	1,000	,,
Myriametre	=	10,000	,,
Sub-multiples—Decimetre	=	$\frac{1}{10}$	,,
Centimetre	=	$\frac{1}{100}$	,,
Millimetre	=	$\frac{1}{1000}$	,,

Surface Measure for Walls, Floors, Paper, Glass, &c.

The SQUARE METRE contains—

100 Square Decimetres.
10,000 ,, Centimetres.
1,000,000 ,, Millimetres.

Surface Measure for Fields, Woods, &c.

The Unit is the ARE = 119·6033 square yards.

The Hectare contains 100 ares.
,, Centiare ,, $\frac{1}{100}$ of an are.
The Are contains 100 Square Metres.

Volume Measure for Wine, Oil, Wheat, Apples, &c.

The Unit is the LITRE = 1·76077 pints.

The Decalitre	=	10	litres.
,, Hectolitre	=	100	,,
,, Kilolitre	=	1,000	,,
,, Decilitre	=	$\frac{1}{10}$	of a litre.
,, Centilitre	=	$\frac{1}{100}$	,,
,, Millilitre	=	$\frac{1}{1000}$	,,

The Litre = 1 Cubic Decimetre.
A Litre of distilled water weighs 1 Kilogramme.

Measure of Solidity for Masonry, Capacity of Docks, &c.

The Unit is the CUBIC METRE which contains—

1,000 cubic Decimetres.
1,000,000 ,, Centimetres.
1,000,000,000 ,, Millimetres.

Measure of Solidity for Firewood, Ropes, Dye-woods, &c.

The Unit is the STERE = 1 cub. yd. 8·31655 cub. ft.

The Decastere = 10 steres.
,, Decistere = $\frac{1}{10}$ of a stere.
The Stere = 1 Cubic Metre.

The Unit of **Weight** is the GRAMME = ·56438 drams.

The Decagramme	=	10 grammes.
,, Hectogramme	=	100 ,,
,, Kilogramme	=	1,000 ,,
,, Myriagramme	=	10 kilogrammes.
,, Metric Quintal	=	100 ,,
,, Millier	=	1,000 ,,
,, Decigramme	=	$\frac{1}{10}$ of a gramme.
,, Centigramme	=	$\frac{1}{100}$,,
,, Milligramme	=	$\frac{1}{1000}$,,

A Cubic Centimetre of distilled water at 39$\frac{1}{2}$° F. weighs 1 gramme in a vacuum.

The **Monetary** Unit is the FRANC = 9$\frac{3}{5}$ pence.

The Franc = 10 Decimes.
,, ,, = 100 Centimes.

20 one-franc pieces and 20 two-franc pieces placed in line measure a Metre.

ARITHMETICAL SIGNS, &c.

+	plus or more signifies	addition,	as 6 + 3 = 9
−	minus or less "	subtraction "	8 − 5 = 3
×	multiplied by "	multiplication "	4 × 2 = 8
÷	divided by "	division "	8 ÷ 4 = 2
=	equal to "	equality "	3 + 2 = 5
$\mathcal{S}$	difference between,	... ...	as 7 $\mathcal{S}$ 10 = 3

∴ signifies therefore.

∵ " because.

: : : : are the signs of proportion.

6 : 14 :: 18 : 42 means, as 6 is to 14 so is 18 to 42

$\surd$ sign of square root, as $\surd$ 9 = 3

$\sqrt[3]{}$ " " cube " " $\sqrt[3]{}$ 27 = 3

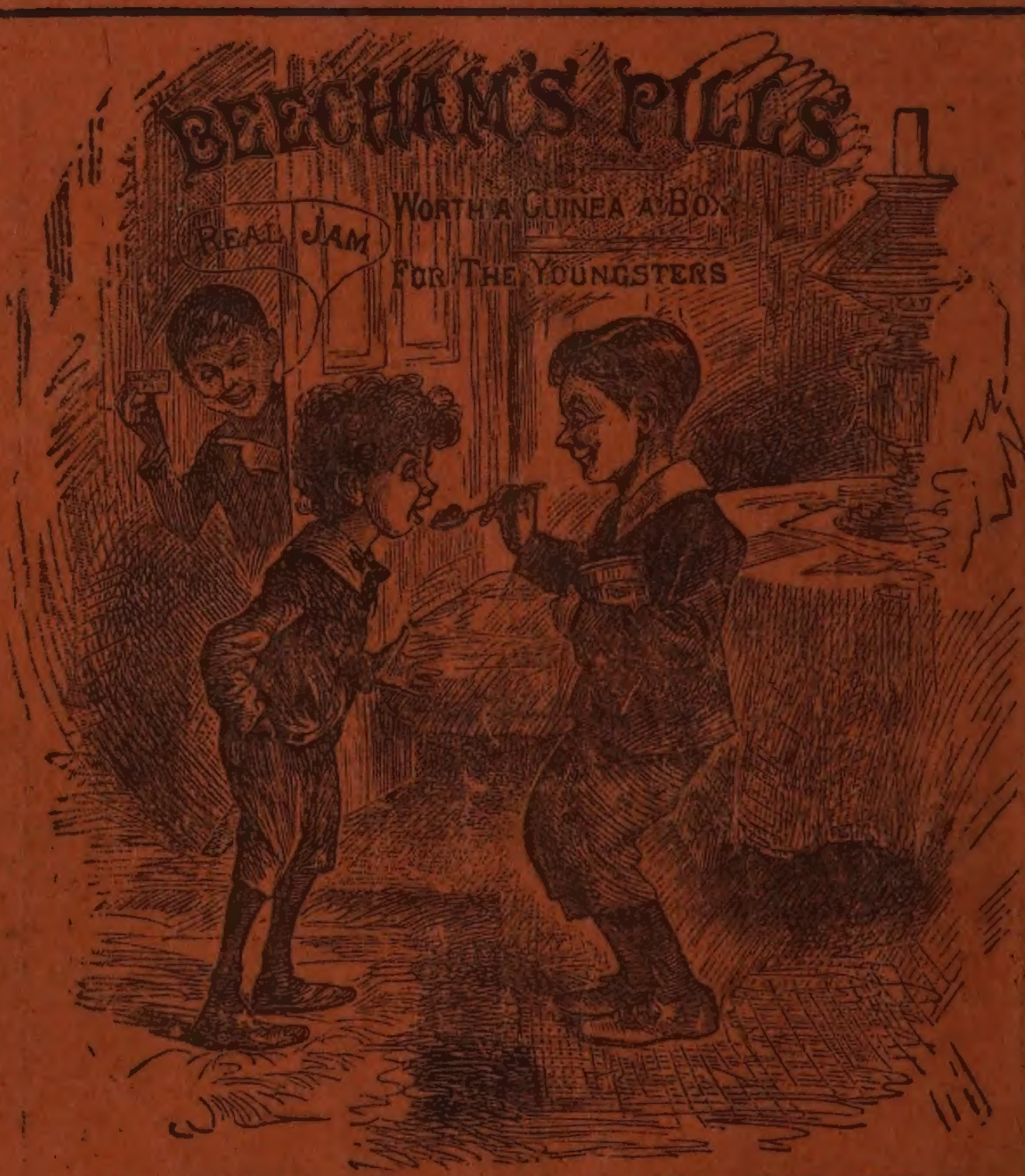
( ) { } [ ] are brackets, all quantities between them are treated as one.

D or d signifies Denarii or pence.
S or s " Solidi or shillings.
L or £ " Libræ or pounds.

To find the SUM add the numbers.
" " " DIFFERENCE subtract.
" " " PRODUCT multiply.
" " " QUOTIENT divide.

NUMERATION TABLE.

4	... Units.
34	... Tens.
634	... Hundreds.
8,634	... Thousands.
98,634	... Tens of thousands.
198,634	... Hundreds of thousands.
5,198,634	... Millions.
25,198,634	... Tens of millions.
325,198,634	... Hundreds of millions.



"MORE IN THAT THAN MEETS THE EYE."

BEECHAM'S PILLS are, without doubt, one of the finest medicines possible for lads and lasses of the rising generation;-a medicine that restores tone and condition to stomach and liver, too often disordered by the consumption of pastry, sweets, and similiar delectables, which never "meet the eye" of parents or teachers. And, *per contra*, **BEECHAM'S PILLS** may be administered, where needful, without "meeting the eye" of the children. Those youngsters in the picture are adopting one well-known, old, familiar way. Let us hope their motive is as generous as that of the fond mother who, under certain circumstances, also does "good by stealth," and would "blush to find it fame."